REMARKS

Applicants respectfully traverse and request reconsideration.

Claims 3, 5 and 11-17 stand rejected under 35 U.S.C. § 112, 2d para., as alleged being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. These claims have been deleted without prejudice. Claims 18, 19 and 21 are being presented for new examination.

The amendments to Claim 4, 10 and 14 correct typographical errors and do not narrow the scope of the claims as originally filed.

Applicants wish to thank the Examiner for the indication that Claims 7 and 9 would be allowable if rewritten in independent form.

Claims 1-4, 6, 10 and 14-16 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 4,994,756 (Brilka). Brilka discloses a circuit arrangement for amplifying a television signal wherein bipolar devices are used. A differential amplifier includes emitter coupled transistors and a combination of resistors arranged in the emitter branch of the transistors and a resistive feedback network for feeding back a signal from the output of a differential amplifier to the input of the differential amplifier. Brilka teaches using a single and non-selectable power supply (DC voltage) via a common power supply terminal 19 to the differential amplifier at all times.

As to Claim 1, the Office Action states that the differential receivers 101 and 102 of Brilka are a single gate oxide differential receiver. However, Applicants respectfully submit that the Brilka circuit is comprised of bipolar devices and not gate devices (i.e., FET's). In fact, the cited reference requires, among other bipolar elements, emitter follower stages and also notes that since bipolar devices are utilized there is a relatively low "early voltage" corresponding to a relatively high dependence of the collector currents of a transistor (Col. 1, ll. 67-Col. 2, line 4). As such, the Brilka fails to disclose a single gate oxide differential receiver as claimed.

Moreover, Applicants claim a switchable voltage supply circuit coupled to the single gate oxide differential receiver, that is responsive to a control signal to select a differential receiver

supply voltage for the single gate oxide differential receiver wherein one of the selected supply voltages is different from an input/output pad supply voltage. The Office Action cites items 10, 11, 12 and 13 as the alleged switchable voltage supply circuit and also cites signals 8 or 9 as alleged control signals that control the switchable voltage supply circuit to select a single gate oxide differential receiver supply voltage. In addition, the Office Action cites the output 6 of power amplifier as an alleged I/O pad supply voltage. Applicants respectfully submit that the cited reference appears to be mischaracterized.

For example, the Brilka circuit uses a single d.c. supply voltage and does not switch different d.c. supply voltages to the differential amplifier 1. To the contrary, a constant and single supply voltage is provided as shown, for example, in Fig. 1 (19). As such, transistors 10, 11, 12 and 13 do not control a supply voltage line to the differential receiver. To the contrary, they are emitter follower stages that constitute highly resistive loads for input signals (see, e.g., Col. 3, ll. 55-63). In addition, signals 8 and 9 are input signals that provide the input signals to input terminals 2 and 3 of the differential receiver. They are not control signals to select differential receiver supply voltages for a single gate oxide differential receiver as claimed. Moreover, the output 6 alleged to be the I/O pad supply voltage, is not a supply voltage but is an output signal from a power amplifier that is based on the input signal supplied to the reference differential receiver. In addition, Applicants respectfully request a showing of the I/O pad circuitry as alleged. Also, as noted above, the circuit of Brilka is not made of a single gate oxide but instead is a bipolar arrangement. For any or all of the above reasons, Claim 1 is allowable.

As to Claim 2, since there is no switchable voltage supply circuit, there is no selection of differential receiver supply voltage that is higher than the I/O pad supply voltage as claimed.

As to Claim 4, again, since there is no switchable voltage supply circuit in Brilka, there is no circuit that selects the differential receiver supply voltage for a single gate oxide differential receiver that is selected to be a voltage level higher than a maximum voltage level of an input voltage since no supply voltage selection occurs in Brilka for the differential amplifier 1. Accordingly, this claim is also believed to be in condition for allowance.

As to Claim 6, Applicants respectfully reassert the relevant remarks made above with respect to Claim 1 and the control signal and further note that input signals 8 and 9 do not control

a switchable differential receiver power supply level as required by the claim. Accordingly, this claim is also believed to be in condition for allowance.

As to Claim 10, Applicants respectfully reassert the relevant remarks made above with respect to Claims 1-4.

As to Claims 14-16, Applicants respectfully reassert the relevant remarks made above with respect to Claims 1-4 and 6.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Brilka. Applicants respectfully reassert the relevant remarks made above with respect to Claim 1. In addition, the Office Action indicates that Claim 1 allegedly claims the manner in which a claimed apparatus is intended to be employed. However, Applicants respectfully submit that this appears to be a mischaracterization of the claim language. Claim 8 requires that the receiver of Claim 1 "generate an output signal to circuitry for a videographics processor." Hence, an output signal must be generated as well as suitable coupling to communicate the output signal to the circuitry for a videographics processor. Brilka is silent as to any such structure. Accordingly, this claim is also believed to be in condition for allowance.

New claims 18-21 add additional novel subject matter not taught or suggested by the cited reference.

Attached hereto is a marked up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made."

Applicants respectfully submit that the claims are in condition for allowance and respectfully request that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below-listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Replacement paragraph, page 1, beginning at line 9:

This is a related application to the following co-pending applications, filed on even date, having the same inventors and assigned to instant assignee:

1. Differential Input Receiver and Method for Reducing Noise, [having serial number _____]U.S. Patent No. 6,133,772, issued October 17, 2000, and having attorney docket no. 0100.990019;

2. Voltage Supply Discriminator and Method, [having serial number _____]U.S. Patent No. 6,297,683, issued October 20, 2001 and having attorney docket no. 0100.990017; and

3. Pre-buffer Voltage Level Shifting Circuit and Method, having serial number [_____]09/211,496 and attorney docket no. 0100.990018.

Replacement paragraph, page 3, beginning at line 29:

FIG. 2 illustrates one embodiment of an integrated differential receiver 100 having a single gate oxide differential receiver 102, a switchable voltage supply circuit 104 and an isolation output buffer 106. The switchable voltage supply circuit 104 receives as input, a desired I/O pad supply voltage 108 which may be a plurality of different supply voltages. For purposes of illustration only, the desired supply voltages may be, for example, 3.3 volts and 1.5 volts. The switchable voltage supply circuit 104 also receives another input such as a [first] reference supply voltage 110 which may be for example the supply voltage for the core logic, such as 2.5 volts or other suitable reference voltage. In addition, the switchable voltage supply circuit 104 receives a control signal 112 which indicates an input signal voltage range, such as whether the input signal 114 to the differential receiver 102 will be in a range from 0 to 1.5 volts, or for example 0 to 3.3 volts. The control signal may be a signal from an input pin for the integrated circuit or may come from other suitable control logic on the integrated circuit. The switchable voltage supply circuit 104 selects a single gate oxide differential receiver supply

voltage 116 for the single gate oxide differential receiver 102 based on the desired I/O pad supply voltage 108, the first reference voltage 110 and the control signal 112.

Replacement paragraph, page 5 beginning at line 15:

The differential receiver 102 receives the input signal 114, for example, from an external chip. The input signal is received on one input of the single gate oxide differential receiver 102. On another input, the single gate oxide differential receiver 102 receives a [second]reference voltage 117. The [second]reference voltage 117 may be for example one half of the desired supply voltage 108, or any other suitable reference voltage. Based on the [second]reference voltage 117 and the level of the input signal 114, the differential receiver outputs a received signal 118 to the isolation output buffer 106. The isolation output buffer 106 then outputs the signal 118 to the core logic.

Replacement paragraph, page 5 beginning at line 24:

In operation, the circuit provides either of at least an I/O pad supply voltage 108 and a [second]reference supply voltage 110 for the single gate oxide differential receiver based on the control signal such that the reference supply voltage 110 is selected as the differential receiver supply voltage 116 when the control signal indicates a maximum input signal voltage to be less than the [second]reference supply voltage 110. The circuit also provides the I/O pad supply voltage as the differential receiver supply voltage 116 when the control signal indicates a maximum input signal voltage to be greater than the [second]reference supply voltage 110.

Replacement paragraph, page 6 beginning at line 11:

If however the desired I/O pad supply voltage is 1.5 volts as indicated by the I/O pad voltage 108, and [as]if the control signal 112 indicates that the input voltage range is 0 to 1.5 volts, the switchable voltage supply circuit 104 selects a supply voltage 116 for the single gate oxide differential receiver that is different from the 1.5 volt I/O pad supply or input signal range. For example if the I/O pad 108 is indicated to be 1.5 volts by the control signal, the switchable voltage supply circuit 104 generates a 2.5 volt single gate oxide differential receiver supply voltage 116 for the differential receiver to maximize the speed of operation of the differential receiver 102. As such when a lower I/O pad supply voltage is used, the integrated differential

receiver 100 automatically detects the level and outputs a higher supply voltage to the single gate oxide differential receiver. In one embodiment, the higher output voltage is equal to the first reference voltage 110.

In the claims:

Please delete Claims 3, 5, 11 and 17 without prejudice.

Please amend Claims 4, 10 and 14 to read as follows:

4. (Once Amended) The receiver of claim 1 wherein the differential receiver receives a [first]reference voltage on a first differential input and an input voltage on a second differential input and wherein the switchable voltage supply circuit selects the differential receiver supply voltage for the single gate oxide differential receiver to be a voltage level higher than a maximum voltage level of the input voltage.

10. (Once Amended) An integrated differential receiver for an input/output pad comprising:

a single gate oxide differential receiver that receives a [first]reference voltage on a first differential input and an input voltage on a second differential input;

a switchable voltage supply circuit, operatively coupled to the single gate oxide differential receiver, switchable through at least one control signal to select a differential receiver supply voltage for the single gate oxide differential receiver wherein at least one of the selected supply voltages is a voltage level higher than a maximum voltage level of the input voltage; and

an isolation output buffer operatively coupled to core logic.

14. (Once Amended) A method for controlling a voltage supply for a differential receiver comprising the steps of:

providing either of at least an I/O pad supply voltage [and]or a [second]reference supply voltage for a single gate oxide differential receiver based on a control signal such

that the reference supply voltage is selected as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be less than the second reference voltage, and

providing the I/O pad supply voltage as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be greater than the second reference voltage.

18. (New) The receiver of claim 1 including an isolation output buffer operatively coupled to an output of the differential receiver and that outputs a signal.

19. (New) The receiver of claim 1 wherein the switchable voltage supply circuit provides either of at least an I/O pad supply voltage or a reference supply voltage for the differential receiver based on the control signal such that the reference supply voltage is selected as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to the single gate oxide differential receiver to be less than the reference supply voltage, and wherein the switchable voltage supply circuit provides the I/O pad supply voltage as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be greater than the reference supply voltage.

20. (New) The receiver of claim 10 wherein the switchable voltage supply circuit provides either of at least an I/O pad supply voltage or a reference supply voltage for the differential receiver based on the control signal such that the reference supply voltage is selected as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be less than the reference supply voltage, and wherein the switchable voltage supply circuit provides the I/O pad supply voltage as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be greater than the reference supply voltage.

21. (New) The method of claim 14 including providing at least one of an I/O pad supply voltage and a reference supply voltage for a differential receiver based on the control signal such that the reference supply voltage is selected as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be less than the second

reference voltage, and providing the I/O pad supply voltage as the differential receiver supply voltage when the control signal indicates a maximum input signal voltage to be greater than the reference supply voltage.